Applicant notes with appreciation the Examiner's indication that claims 18-35 and 49-64 are allowed.

Claims 1 and 39 are objected to. Applicant has amended claims 1 and 39 herein to address the Examiner's comments. Applicant respectfully requests the Examiner to enter these claim amendments.

The drawings filed on August 20, 2001 are objected to because Figure 1 is not labeled as Prior Art, and because Figs. 3A, 3B, and 3C should be labeled as Figs. 3, 4, and 5, respectively. Applicant submits herewith a Request For Approval Of Proposed Drawing Changes to make these changes to the drawings.

II. PRIOR ART REJECTIONS

A. Claims 1-5, 11, and 39-43

Claims 1-5, 11, and 39-43 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,504,381 (Kato). This rejection is traversed.

Applicant respectfully submits that Kato does not teach or suggest a flexible damper and rigid bumpers having a first and second stiffness, respectively, wherein the second stiffness is greater than the first stiffness, as recited in independent claims 1 and 39. The Examiner asserts that element 204 of Kato are flexible dampers having a first stiffness and that element 202 are rigid bumpers having a second stiffness greater than the first stiffness. Applicant submits that element 202 of Kato, the secondary yoke, is not a bumper since it does not contact, or bump against, anything. Rather, element 202 of Kato is a secondary yoke, which supports the shaft 103. In the device of Kato, magnetic flux created by coils LYc, LYb, LXa, and LXb cause the secondary yoke 202 move towards the primary yoke 101 in the X and Y directions in order to control the vibration in the X and Y direction (see Fig. 14 and column 11, line 33 – column 12, line 45). The coils do not cause the secondary yoke 202 to move in order to bump against another component. Therefore, the secondary yoke 202 of Kato is not a bumper, as asserted by the Examiner.

In the present invention, during extreme loading, the bumpers frictionally engage the outer race of the bearing assembly, as recited by claim 11. In Kato, the secondary yoke 202 does not engage a bearing assembly in extreme loading conditions. As shown in Fig. 13, the figure relied on by the Examiner, the secondary yoke 202 does not engage anything. Therefore, Applicant submits that Kato does not teach this feature of independent claims 1 and 39. Accordingly, Applicant submits that these claims are not anticipated by Kato.

These differences are not surprising since the device taught by Kato is a vibration control device for use in a rotating machine employed in a textile machine that prevents the reduction in quality of yarn caused by excessive vibration of a shaft. Whereas, the present invention is directed to an energy storage device, which has a very high stiffness during extreme loading conditions in order to limit further displacement between the rotor and stator.

Since claims 1 and 39 are not anticipated by Kato, claims 2-5, 11, and 40-43, which depend therefrom, also are not anticipated by Kato. Thus, Applicant submits that the rejection of claims 1-5, 11, and 39-43 under 35 U.S.C. § 102(b) is improper.

B. Claims 6-10, 12-17 and 44-48

Claims 6-10, 12-17 and 44-48 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kato. This rejection is traversed.

As presented above, Applicant submits that Kato fails to teach or suggest a flexible damper and rigid bumpers having a first and second stiffness, respectively, wherein the second stiffness is greater than the first stiffness, as recited in independent claims 1 and 39. Therefore, Applicant submits that the invention defined by claims 6-10, 12-17 and 44-48 would not have been obvious over Kato and that the rejection of claims 6-10, 12-17 and 44-48 under 35 U.S.C. § 103(a) is improper.

The Examiner asserts that claims 14-17, 47 and 48 would have been obvious because discovering an optimum value of a result effective variable involves on routine skill in the art. Applicant submits that a particular parameter must first be recognized as a result-effective variable before the determination that the an optimum range would have been obvious (see MPEP 2144.04 II. B.). Applicant submits that Kato does not recognize that the clearance between a stator and a rotor, the clearance between an outer race and rigid bumpers, the stiffness of flexible dampers and the stiffness of rigid bumpers are result-effective variables. Therefore, Applicant submits that the ranges recited in claims 14-17, 47 and 48 would not have been obvious over Kato.

Based on the foregoing, Applicant submits that the present application is in condition for allowance. Applicant kindly requests the Examiner to contact the undersigned at the phone number listed below to discuss this application, if the Examiner feels that such discussion may expedite prosecution of the present application.

Applicant believes that no additional fees are due for the subject application. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge Deposit Account No. 04-1105.

Respectfully submitted,

Date: May 6, 2003

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Please amend claims 1 and 39.

1. (Twice Amended) A damping system for an evacuated energy storage device, said device having a rotor assembly that is rotatably supported and guided by a bearing assembly, comprising a rolling element substantially confined between an inner and an outer race, and a stator assembly, the system comprising:

one or more flexible dampers, each having a first stiffness; and

a plurality of [more] rigid bumpers, each of said plurality of rigid bumpers having a second stiffness, wherein said second stiffness is greater than said first stiffness.

39. (Twice Amended) An evacuated energy storage device, said device comprising:

a bearing assembly; said bearing assembly further comprising:

an inner race,

an outer race,

a rolling element, wherein said rolling element is substantially confined between said inner and said outer race;

a rotor assembly that is rotatably supported and guided by said bearing assembly;

a stator assembly; and

a dual stiffness damping system, the system comprising:

one or more flexible dampers, each having a first stiffness; and a

plurality of [more] rigid bumpers, each of said plurality of rigid bumpers having a second stiffness, wherein said stiffness is greater than first stiffness.